

ABSTRACT

A method and an apparatus accurately discriminates between speech and voice-band data (VBD) in a communication network by calculating self similarity ratio (SSR) values, which indicate periodicity characteristics of an input signal segment, and/or autocorrelation coefficients, which indicate spectral characteristics of an input signal segment, to generate a speech/VBD discrimination result. In one implementation, the speech-VBD discriminating apparatus calculates both short-term delay and long-term delay SSR values to analyze the repetition rate of an input signal frame, thereby indicating whether the input signal frame has the periodicity characteristics of a typical speech signal or a VBD signal. The speech-VBD discriminating apparatus further calculates a plurality of short-term autocorrelation coefficients to determine the spectral envelope of an input frame, thereby facilitating accurate speech/VBD discrimination. According to one implementation of the present invention, the speech-VBD discriminating apparatus relies on sequential decision logic which improves classification performance by recognizing that changes from speech to VBD or vice versa in a communication medium are unlikely, and discounts discrimination results for relatively low-power signal portions which are more susceptible to errors to further improve discrimination accuracy.